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A Report of the Pennsylvania Research Project

by Dr. Philip D. Smith

Which of these audio-assistance systems—the audio-active, audio-visual language laboratory or simply a classroom tape recorder—is best suited economically and instructionally to the development of communication and structural accuracy in the typical secondary school situation? In 1967 the Pennsylvania Foreign Language Research Project, a joint venture of the State Department of Public Instruction and West Chester State College and Philadelphia, undertook a one-hundred school statewide experiment to determine the relative effectiveness of various teaching strategies and laboratory systems. Results of the first year of the study indicate that the language laboratory in a typical secondary school situation is not effective.

Pennsylvania has long been committed to a quality modern foreign language program. Hundreds of language laboratories are installed in its public schools. The State has mandated a four year modern foreign language sequence in each school system. Since 1961 the State has required that candidates for teacher certification present acceptable scores on the Skills portions of the MLA Proficiency Tests for Teachers and Advanced Students. Implicit in this strong state support for foreign language programs is the responsibility for the state to provide leadership on problems of curriculum improvement and in the evaluation of educational innovation.

Accordingly, a large scale experiment was undertaken in 1967 to determine the relative effectiveness of three modern foreign language teaching methods and three language laboratory systems. Sixty-one French I and forty-three German I classes were assigned to one of seven possible strategy-laboratory combinations. Students were given extensive pre-experimental testing, mid-year testing and final testing.

In any "real-life" educational research, the many variables are absolutely difficult to control. The Pennsylvania Project attempted to preclude some of the criticisms of previous research studies on laboratory

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effectiveness. Specifically, an attempt was made to control variables for many large numbers of cases, randomly assigned to treatments, before predictions testing, training, and experience parameters, observation of students, and the use of test and non-test materials to yield as well results applicable to all schools. Randomization of possible training factors was attempted by including large numbers of cases and students from many typically representative schools throughout the state.

The statistical analysis was a multivariate analysis of covariance using what was then the best analysis provided by the state-of-the-art. The analysis was done at the Computer Science Center of the University of Maryland.

Final data, namely the eleven measures of intelligence, aptitude and foreign language achievement, were obtained on 1,071 French and Spanish students. The parents of these students, selected by random sampling, were given additional tests of reading and writing skills.

The evaluation of the overall language laboratory system is based upon eight-week French I and German I classes assigned to three different laboratory treatments: (1) a classroom type exercise and oral experimentally no answers per day, or the classroom type exercise plus a minimum of two forty-minute periods per week in (2) an audio-active language laboratory or (3) an audio-visual laboratory. Recorded materials were the standard tape programs published by either Holt, Rinehart and Winston or Harcourt, Brace and World, exhibitors of the "electronic aids" used in the experiment. The audio-active versus audio-visual comparison is based solely on those oral students who were randomly assigned to each type of treatment. Students stayed in their assigned treatment throughout the school year.

Since the experiment was an attempt to appraise the oral aural objectives, the laboratory assignments was made the responsibility of the school. This phase of the experiment indicated serious shortcomings in laboratory administration.

Teachers were not told the exact experimental hypothesis of the research project. They served at the end to over-fifth percentile of the pre-institute scores on the MLA *Teacher Proficiency Test*. Teachers were tested in proper laboratory operation.

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[illegible] used in the evaluation were standardized measures, commercially available to all readers, except for a Listening Discrimination Test developed for the Project by Dr. Rebecca Valette, Dir. [illegible] Language Laboratory at Boston College.

TABLE I

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	Pretest		Posttest	
	Mean	σ	Mean	σ
1. MLA Listening Test	.39	.20	.61	.21
2. MLA Reading Test	1.63	.24	2.11	.28
3. Valette Listening Discrim.	.71	.07	.89	.04
	Mid-semester		Mid-semester	
	Mean	σ	Mean	σ
4. MLA Speaking Test (oral-aur.)	.71	.20	1.11	.20
5. MLA Speaking Test (total)	1.27	.22	1.77	.21

A comparison of the three audio-assistance options is given in Table II. There is no significant amount of variance among the groups on the MLA Cooperative Classroom Listening, Speaking or Reading Tests given both at the end of one semester or one half year of instruction. To permit a more precise evaluation, the sub-parts of the final Speaking Test were individually compared and are shown in Table III.

TABLE II

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	Mean	σ	Mean	σ
1. Mimicry	1.647	.238	.225	.497
2. Fill. Tests	.500	.371	.471	.515
3. Dictat.	.676	.514	.667	.707
4. Rol. Open	1.171	.317	.125	.783
5. Rol. Dir.	1.324	.440	.275	.829
6. Rol. Beg.	1.324	.424	1.000	.378
7. Total Speak. Test	1.216	.317	.258	.857

What do the figures mean? Simply that in the experimental population—which was considered a typical secondary school cross section—a made absolutely no difference which audio system was employed. Equal results were obtained with a classroom tape recorder, the audio-active laboratory and the audio-visual laboratory.

What does this mean in terms of implications for the instructional program? Certainly the classroom tape recorder is simpler and much less costly yet was as effective as the laboratory. It does not, however, permit the versatility and flexibility of the laboratory in providing for individualized instruction and testing. Perhaps the use of the language laboratory in a typical school class lock-step drill arrangement is a perversion of the true function of the equipment. Many questions still remain unanswered as the public school moves closer to individualized instructional programs.

The full five year report of the experiment entitled "An Assessment of Three Foreign Language Teaching Strategies Utilizing Three Language Laboratory Systems" (Project OE 5-10001) has been accepted by the U. S. Office of Education and is available through ERIC/CLL. The study continued through a second year with a seven hundred student replication at level 1. Tentative results are confirming the five year findings.

Joseph Hutchinson has pointed out that "We already know that the language laboratory (or electronic classroom) can be effective; what remains to be seen is how long it will take our schools and colleges . . . to learn how to use them effectively." Apparently the typical secondary school language laboratory program is no more effective than regular use of a tape recorder. The profession now must seek ways to increase the instructional effectiveness of the language laboratory.

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